

## ABSTRACT OF THE DISCLOSURE

As a positive electrode active material, a lithium transition metal complex oxide having a layered rock-salt structure containing lithium (Li) and containing magnesium atoms (Mg) substituted for part of lithium atoms (Li) is used. 5 The lithium transition metal complex oxide is formed by chemical or electrochemical substitution of Mg atoms for part of Li atoms in  $\text{LiCoO}_2$ ,  $\text{LiMnO}_2$ ,  $\text{LiFeO}_2$ ,  $\text{LiNiO}_2$ , or the like. A cell is prepared in which a negative electrode 2 and a positive 10 electrode 1 including the lithium transition metal complex oxide (positive electrode active material) are disposed in a non-aqueous electrolyte 5 including a lithium salt, and part of Li in the lithium transition metal complex oxide is extracted by discharging the cell. Then, the electrolyte including Li 15 is replaced with an electrolyte including Mg; and the cell is discharged, so that Mg atoms are substituted for the part of Li atoms in the lithium transition metal complex oxide.